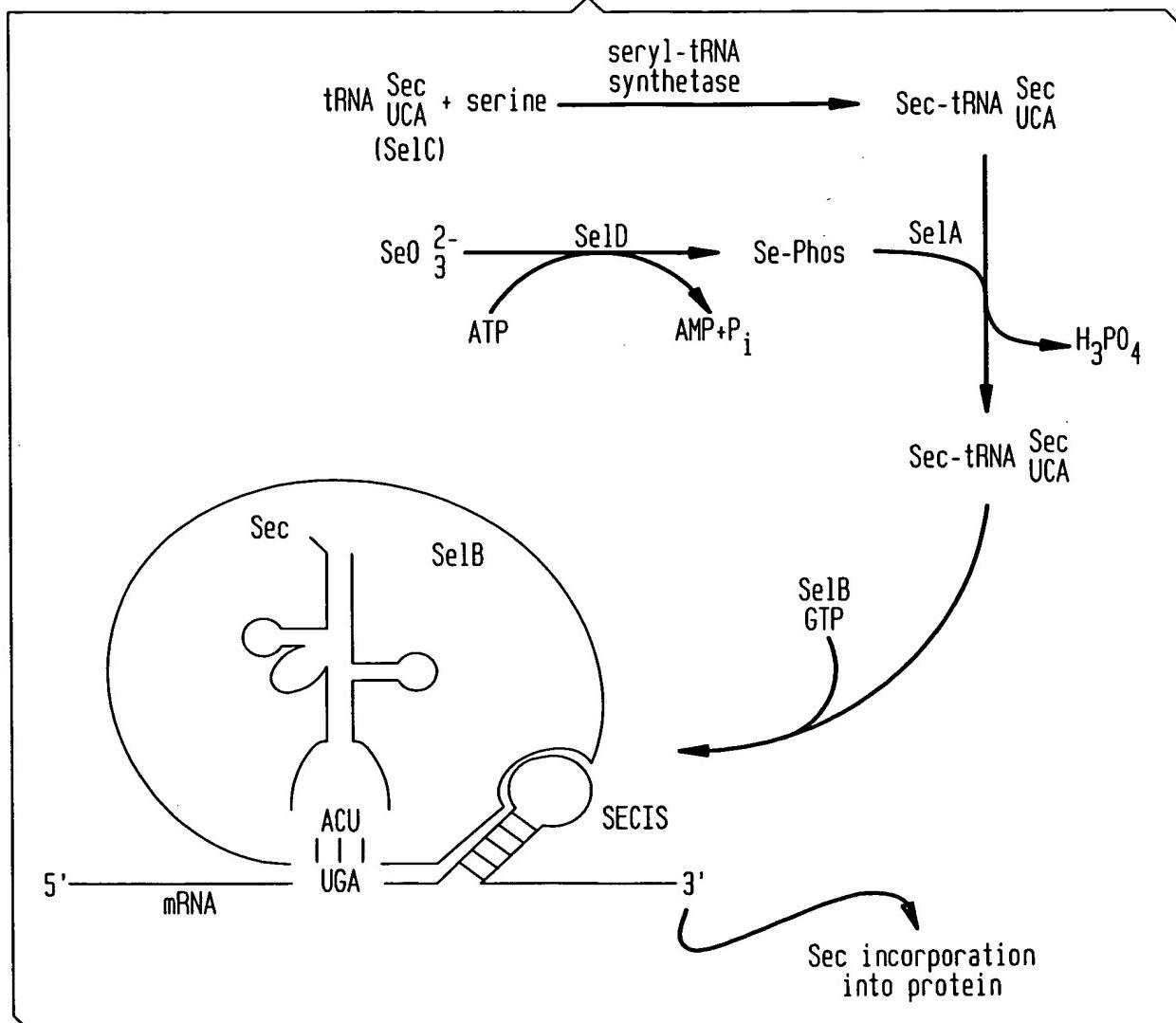




FIG. 1



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FIG. 2

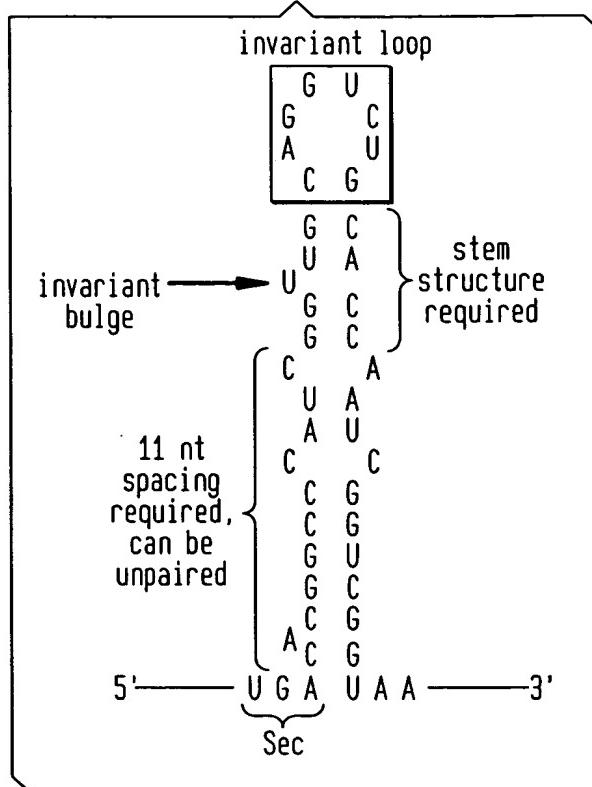
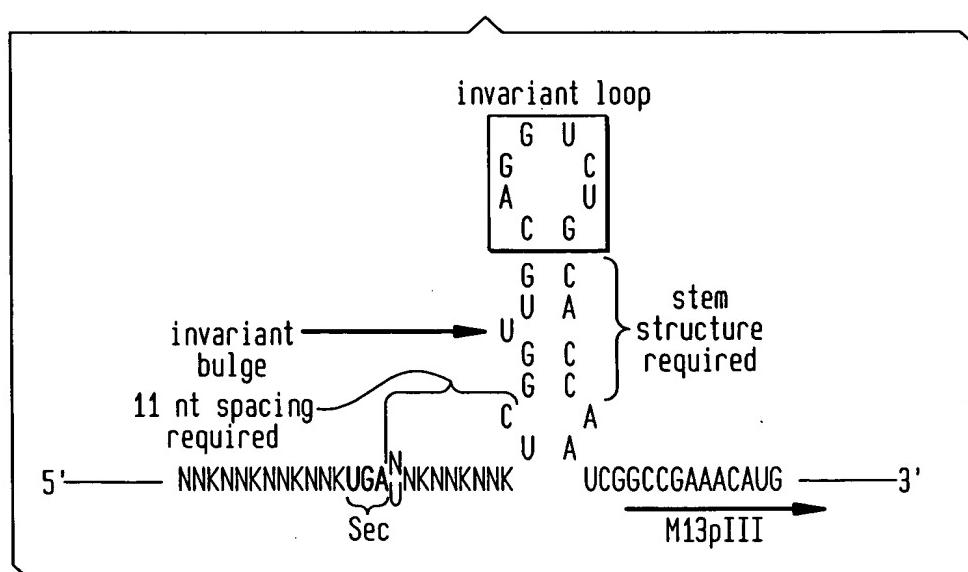


FIG. 4



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FIG. 3A

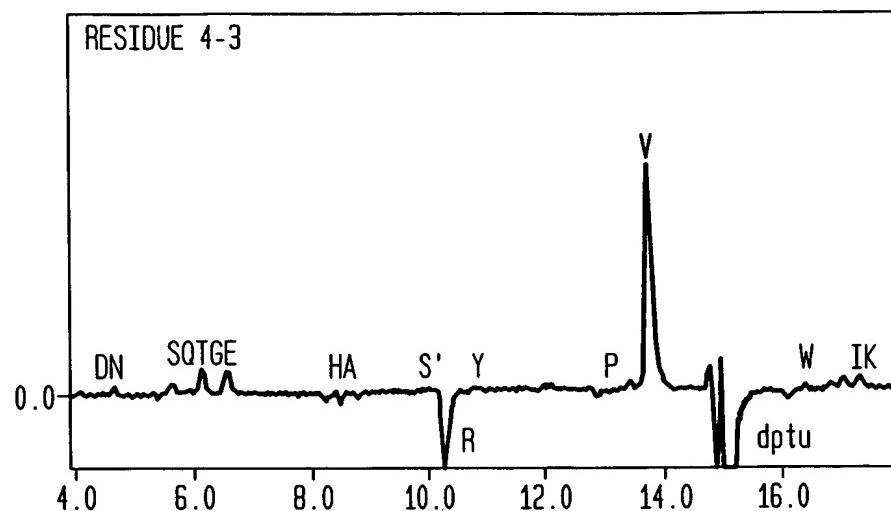


FIG. 3B

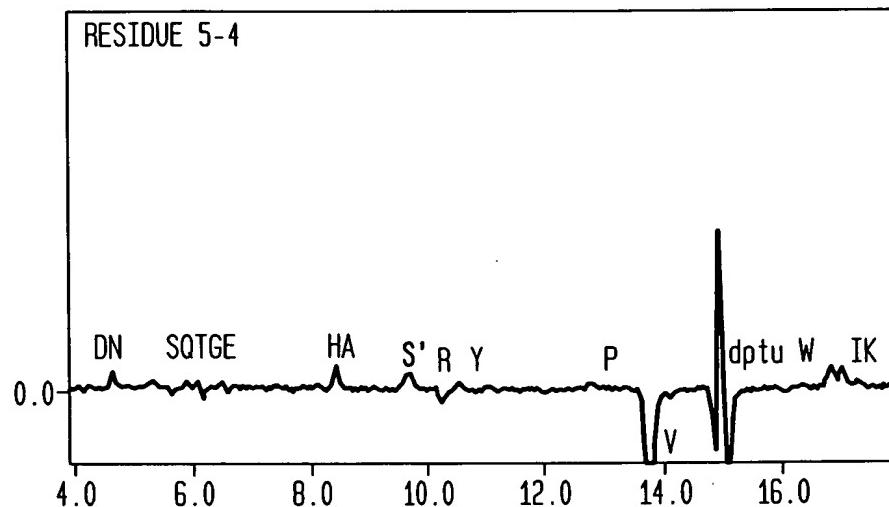


FIG. 3C

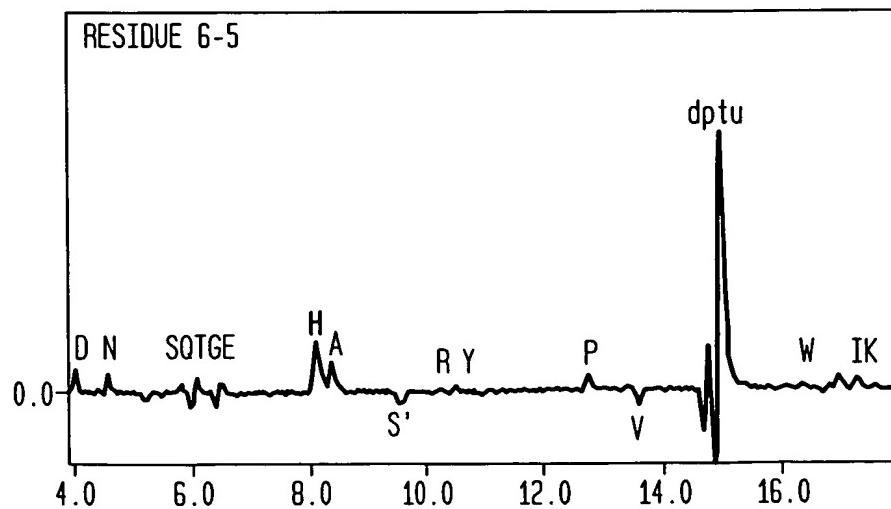


FIG. 5

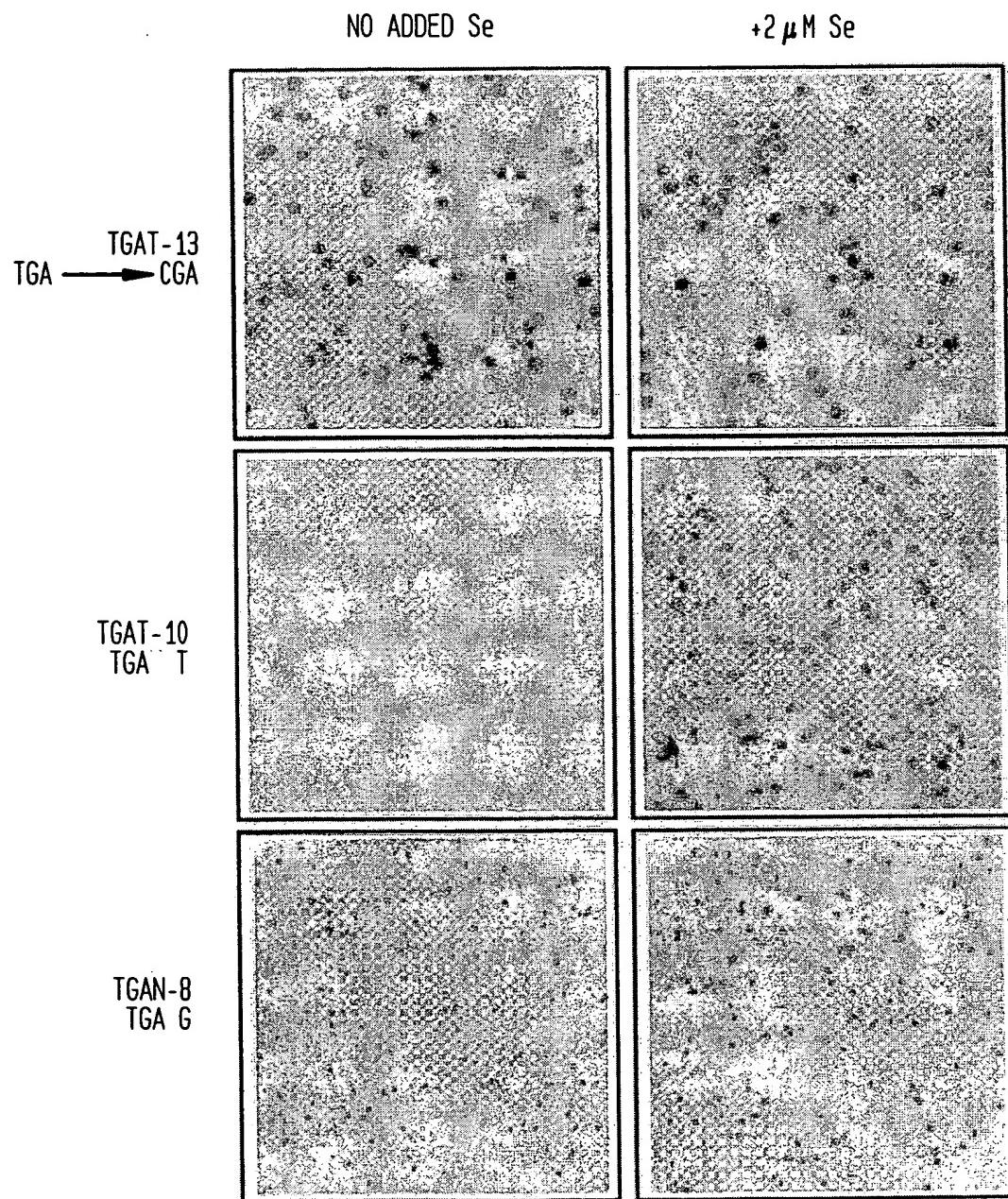


FIG. 6

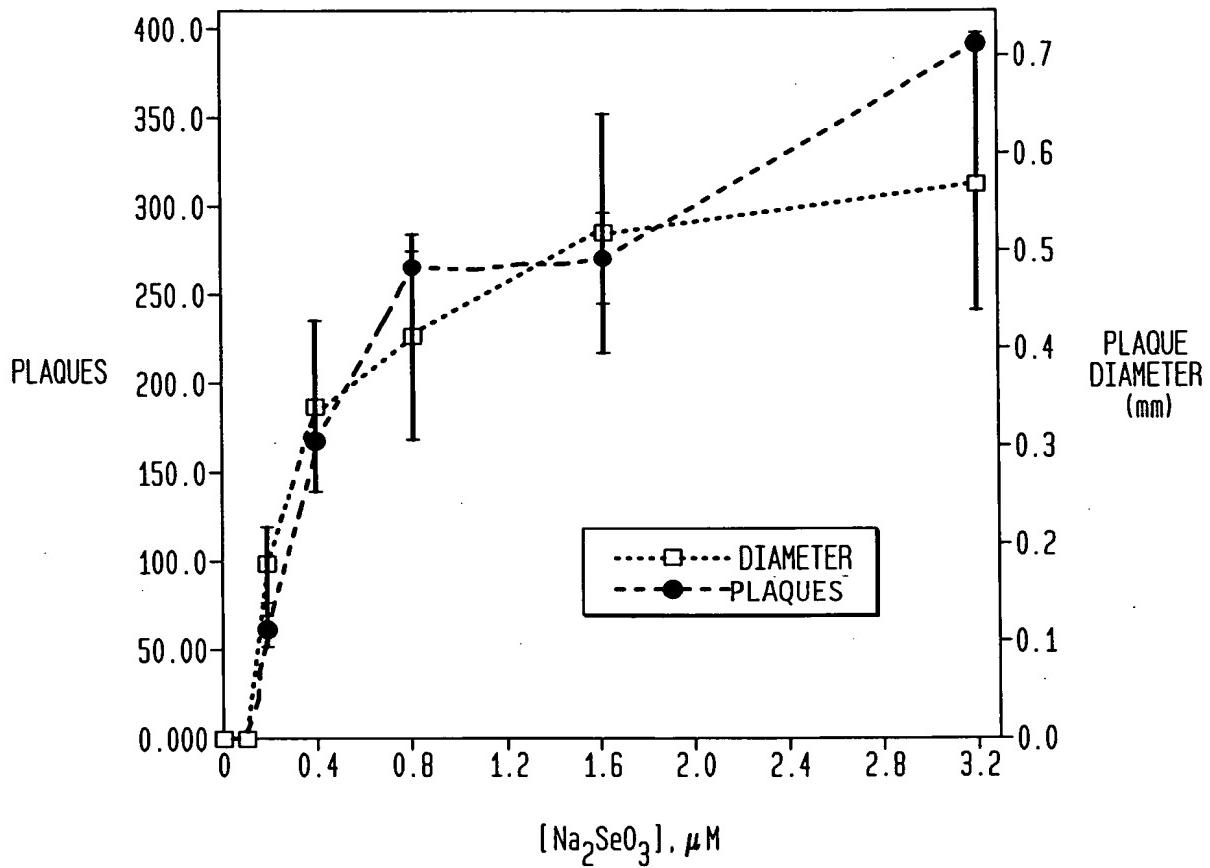


FIG. 7A

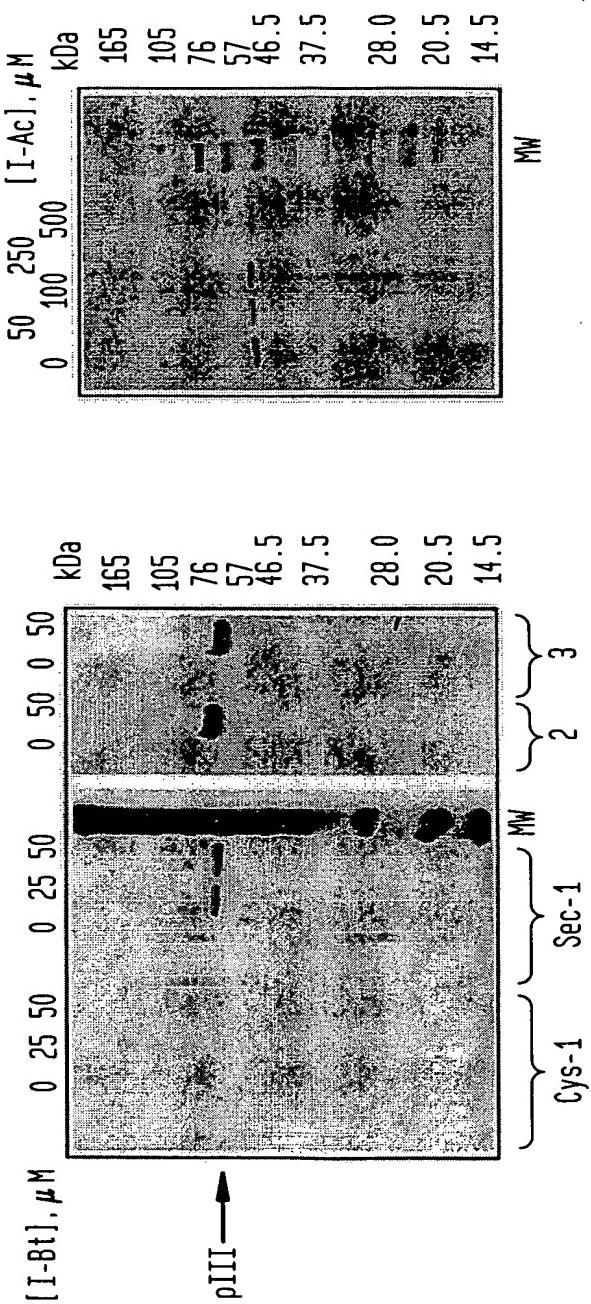
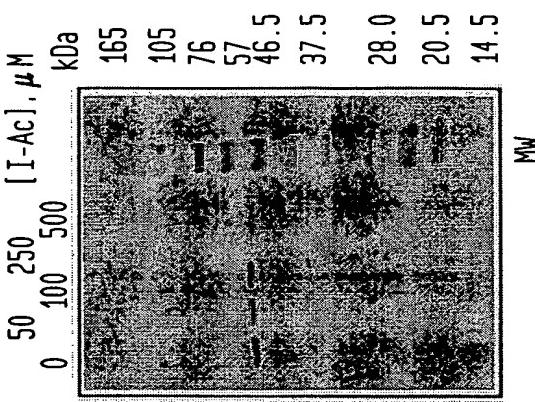


FIG. 7B



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FIG. 8A

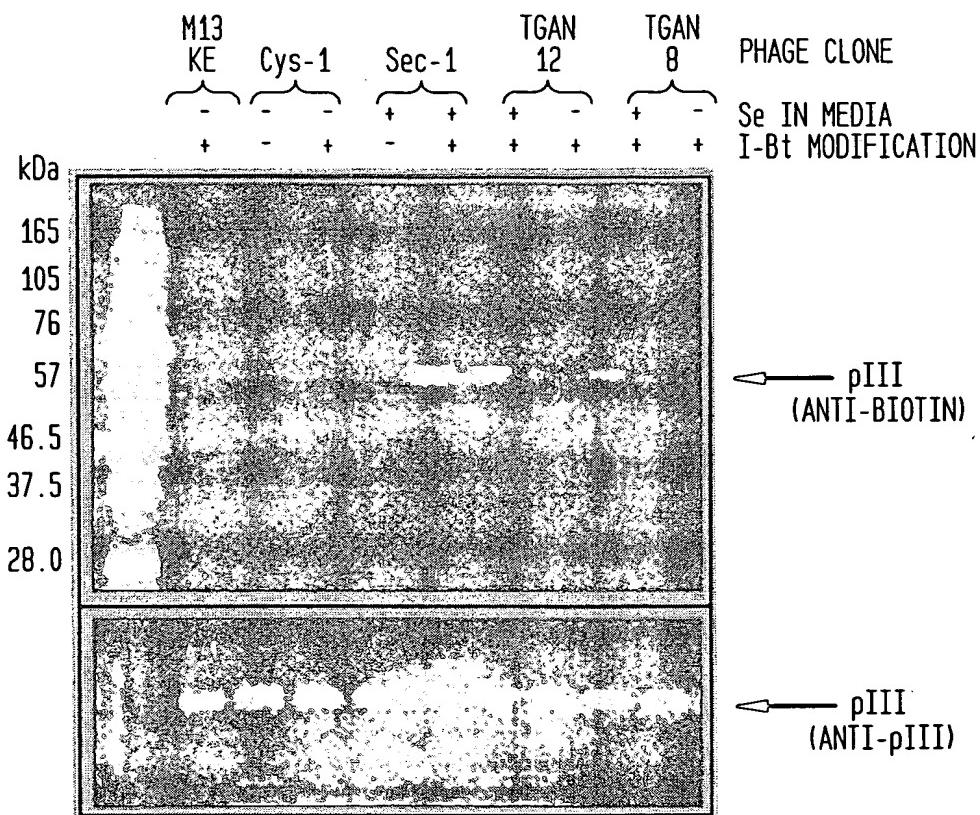
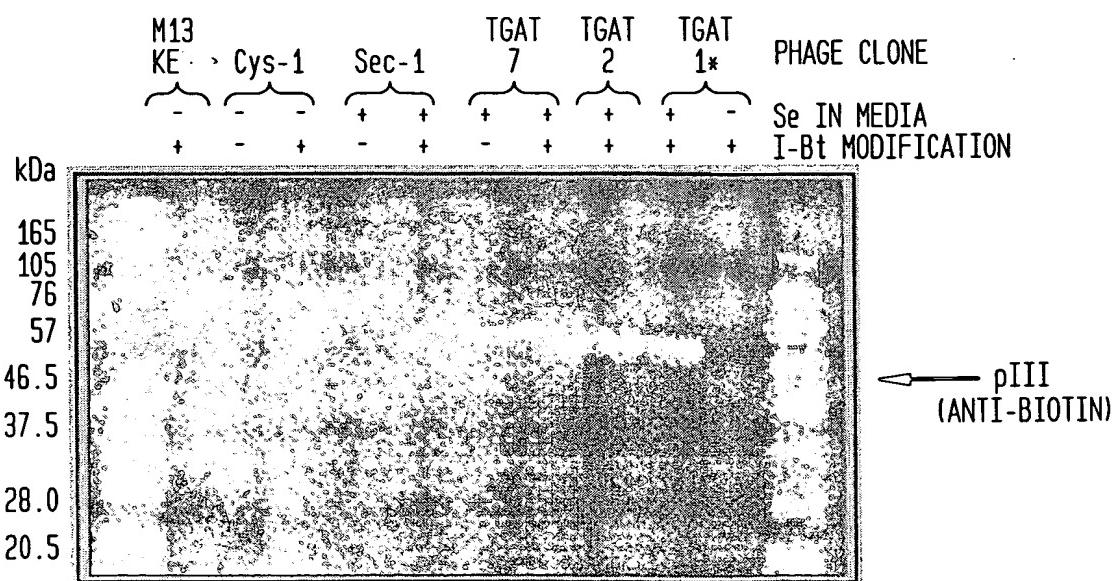


FIG. 8B



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## FIG. 9

CLONE	RANDOM INSERT	Se- DEPENDENT?
TGAN-1	TCG TCT TTT CCT TGA AAG TCG CCT S S F P op <sup>a</sup> K S P	-
TGAN-2	AAG TGT ACG CTT TGA TCT ATG CTG K C T L Sec S M L	+
TGAN-3	TTG CTT TTG CCT TGA AAT GTT CTT L L L P op N V L	-
TGAN-4	ATG ACT ACG CAG TGA CCT TCT CTG M T T Q Sec S M L	+
TGAN-5	CAT ATT CCG CCG TGA ACG AAT CCT H I P P op T N P	-
TGAN-6	AAG GCT CTG TGT TGA CAG GAT TCG K A L C Sec Q D S	+
TGAN-7	CTT CTT CCG TGT TGA GCT CAG CCG L L P C Sec A Q P	+ <sup>b</sup>
TGAN-8	CAT CAT CCG ACT TGA GCT AAG CAG H H P T op A K Q	-
TGAN-9	ATG CCT CCT ACG TGA ATG GCT ACG M P P T op M A T	-
TGAN-10	AAT TGG TTT TCT TGA CTG ACT ACG N W F S op L T T	-
TGAN-11	CTG CAT CCG ACG TGA GCT CGG CCT L H P T op A R P	-
TGAN-12	GAT AGG GGG CCT TGA GCG AAG ATT D R G P op A K I	-
TGAN-13	GCG TCT TTG CCT TGA AGG ACG AGT A S L P op R T S	-

<sup>a</sup>op: opal suppression: Sec or W, depending on Se availability<sup>b</sup> TGAN-7 production was Se-enhanced; Se supplementation yield larger (3-4x diameter) and more (10x) plaques

Selected Library TGAN clones. TGAN-1 was expressed as a pMal-pIII fusion, and tryptophan incorporation was verified by N-terminal sequencing

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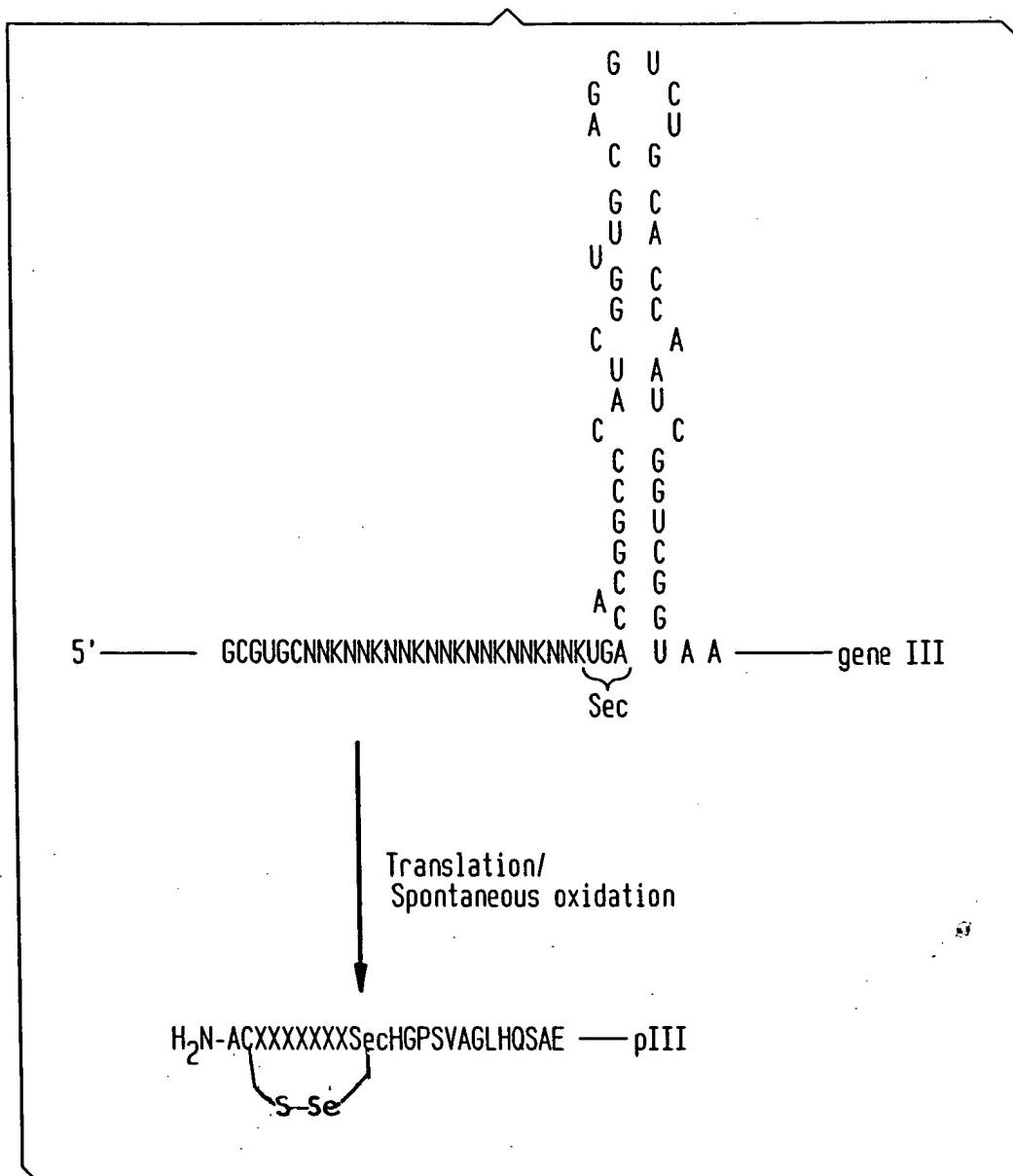
FIG. 10

CLONE	RANDOM INSERT	Se- DEPENDENT?
TGAT-1	L P R Q Sec W S P TTG CCG CGT CAG TGA TGG TCT CCG	+
TGAT-2	L T G T Sec C Q N TTG ACT GGT ACG TGA TGT CAG AAT	+
TGAT-3	E A S R Sec C S T GAG GCG TCG CGT TGA TGT TCG ACT	+
TGAT-4	K L A R Sec S A S AAG TTG GCT CGT TGA TCG GCG TCG	+
TGAT-5	N G A Q Sec S R H AAT GGG GCG CAG TGA TCG AGG CAT	+
TGAT-6	A S P T Sec F K P GCG AGT CCT ACT TGA TTT AAG CCG	+
TGAT-7	C A H P Sec S T R TGT GCT CAT CCG TGA TCT ACT CGT	+
TGAT-8	Q S T R Sec W N D CAG TCG ACG CGG TGA TGG AAT GAT	+
TGAT-9	I V E S Sec L N P ATT GTG GAG TCG TGA TTG AAT CCG	+
TGAT-10	T Q R M Sec L P P ACG CAG CGT ATG TGA TTG CCG CCC	+
TGAT-11	V Q Y T Sec L P K GTG CAG TAT ACG TGA TTG CCG AAG	+
TGAT-12	A G Q S Sec S T D GCT GGG CAG TCG TGA TCG ACT GAT	+
TGAT-13	L S A S R S Q F CTG TCT GCG AGT CGA TCG CAG TTT	-

Selected TGAT library clones. TGAT-13 carried a T→C point mutation within the opal codon

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FIG. 11



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FIG. 12A

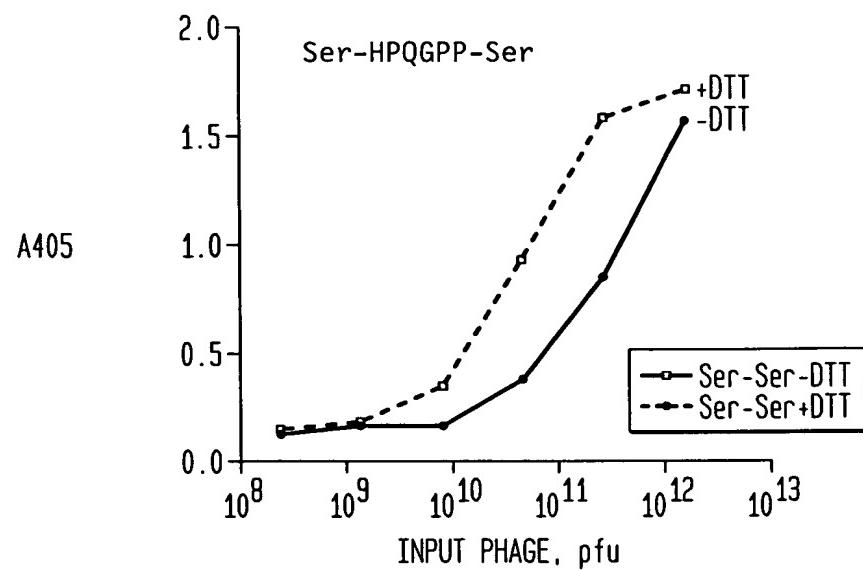


FIG. 12B

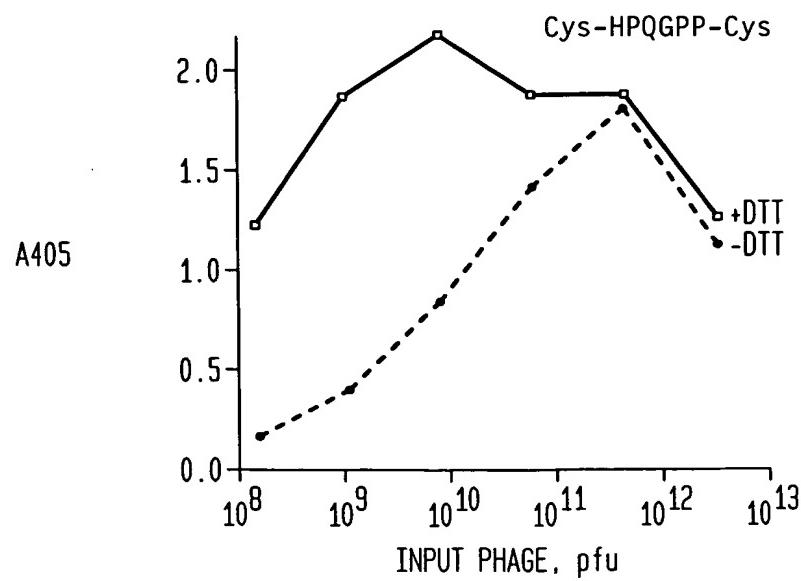
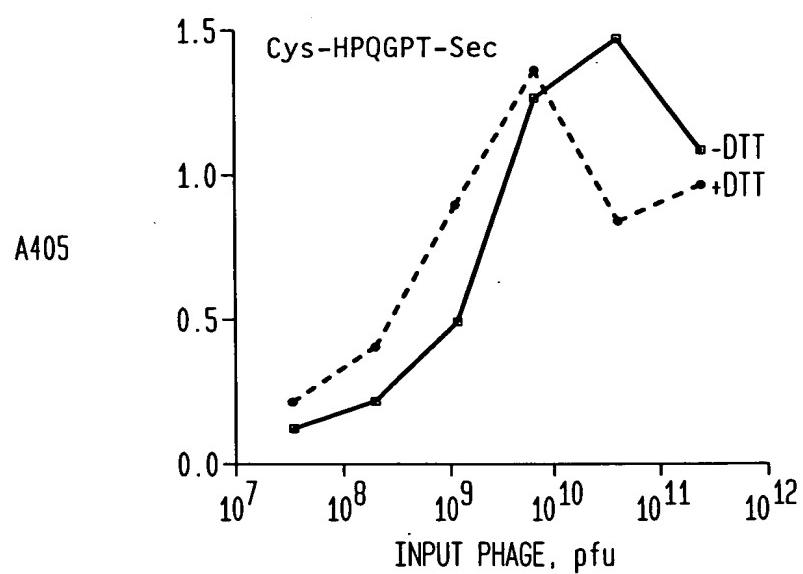


FIG. 12C



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